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ABSTRACT

A sample was taken of 120 children in grades 1, 3, and 5 in two rural Newfoundland communities. To examine behaviors related to school success, the Wechsler Intelligence Scale for Children (Revised), Illinois Test of Psycholinguistic Abilities, and the Concept Assessment Test were administered to all subjects. In order to assess the correlation between low achievement and family variables, father's and mother's education and occupation, the number of children in the family, and the household composition were examined. Parent interviews were conducted to understand the relationship between home environment and school success. Achievement press, language models, academic guidance, activeness, intellectuality, and work habits of the family were studied. It was concluded that the children from one of the schools showed environmental impoverishment. Studies of low sociceconomic status (SES) children between the ages of three and six show they are intellectually retarded and do not later make significant gains in school. The most widely endorsed strategy for helping them is enrichment. However, because of lack of time, the objectives of compensatory programs must be limited to learning experiences that will promote school success. Research clearly indicates that it is only through direct teaching programs and involvement with the home that the low SES child makes significant gains in school success. (Author/MC)

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INSTITUTE FOR RESEARCH IN HUMAN ABILITIES

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THE EXPLOITS VALLEY PROJECT: AN EXAMINATION OF ABILITIES AND FAMILY ENVIRONMENTS OF CHILDREN

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THE EXPLOITS VALLEY PROJECT

An Examination of Abilities and Family Environments of Children

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INSTITUTE FOR RESEARCH IN HUMAN ABILITIES

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The original purpose of the research was to analyze the cognitive and linguistic abilities of children living in rural Newfoundland. On discussing the research with board personnel, principals and teachers, a great deal of concern was expressed for the problems of children from Peterview. Thus it was decided to take a sample from Peterview in an effort to map out the nature of their cognitive and linguistic abilities. Further, an attempt was made to examine the family environment of the children in an effort to determine the nature of the home environment. The method chosen was to compare the Peterview sample with a sample from Botwood to try and determine the different abilities that these samples possessed.

Sample

The sample consisted of a total of 120 children, 60 children each from Peterview and Botwood. Of the 60, 20 children were chosen from each of Grades 1,3, and 5 in the communities. The children were chosen in consultation with the principal. For the purpose of the research it was requested that the children be "average" children for the grade and the school they were in. For example, we requested that "average" Peterview grade ones be included in the sample. This was done in an attempt to avoid having a substantial portion of the sample made up of children who were a-typical. In each group an attempt was made to match as closely as possible for age and sex.

Measurement

To sample as wide a range of behavior as possible the following tests were administered individually to all subjects: Wechsler Intelligence

Scale for Children - Revised (WISC-R), Illinois Test of Psycholinguistic Abilities (ITPA),children'sEmbedded Figures Test (CEFT), and the Concept Assessment Test. A brief description of the measures follows:

WECHSLER INTELLIGENCE SCALE FOR CHILDREN - REVISED

The WISC-R measures various aspects of intelligence that are related to school success. It has both verbal and non-verbal subtests.

VERBAL TESTS

INFORMATION

A measure of the amount of general knowledge a child possesses. It includes questions as varied as "How many ears do you have?", "What do we call a baby cow?" to "How many days make a week?"

SIMILARITIES

Tests whether a child can tell how various things are both similar and different. For example, "In what way are a wheel and a ball alike?"

ARITHMETIC

A measure of the child's ability to utilize abstract concepts of number and numerical operations. For example, "If I cut an apple in half, how many pieces will I have?"

VOCABULARY

Tests how many words a child knows. It includes a series of words from knife to dilatory and the child is asked what each word means.

COMPREHENSION

Measures a child's knowledge of fairly common principles. For example, "What is the thing to do when you cut your finger?" A measure of practical judgement.

DIGIT SPAN (Supplementary Verbal Test)

This is a measure of immediate auditory recall or immediate auditory memory span. The child has to repeat a series of digits after the tester has said them. In the first part they are to be repeated in the same order, while in a second part they are asked to repeat the series backwards.

PERFORMANCE TESTS

PICTURE COMPLETION

Measures the ability to isolate essential and non-essential characteristics. Twenty-six cards of common objects are presented. Each object has a part missing and the child is asked which part is missing.

PICTURE ARRANGEMENT

Tests the ability to evaluate what is going on in a particular picture and to then place it logically in relation to other pictures so that a sensible and consistent story emerges.

BLOCK DESIGN

A good measure of logic, reasoning and space relationships. The child is shown a pattern made of red and white blocks. He is given his own blocks and asked to reproduce the design.

OBJECT ASSEMBLY

Tests perception, visual-motor coordination, and simple assembly skills. The child is presented with several pieces which he must arrange into a common object (girl, horse, car, face).

CODING

This test measures visual-motor dexterity, particularly pencil manipulation. It also calls for the ability to absorb new material presented in an associative context.

MAZES (Supplementary Performance Test)

A measure of planning and attention. The child is presented with

ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITIES

The ITPA measures a number of aspects of linguistic ability and consists of the following subtests:

AUDITORY RECEPTION

This test assesses the child's ability to derive meaning from verbally presented material. (e.g. Do dials yawn? Do cats bark?)

VISUAL RECEPTION

This test measures the child's ability to gain meaning from visual symbols. The child is shown a stimulus picture and is then asked to choose an object or situation which is conceptually similar to the stimulus.

VISUAL SEQUENTIAL MEMORY

This test assesses the child'a ability to reproduce sequences of nonmeaningful figures from memory. The child is shown each sequence of figures and then is asked to put corresponding chips of figures in the same order from memory.

AUDITORY ASSOCIATION

This test taps the child's ability to relate concepts presented orally. A sentence completion technique is used, presenting one statement followed by an incomplete analygous statement allowing the child to complete the second statement appropriately. (e.g. I cut with a saw; I pound with a _____).

AUDITORY SEQUENTIAL MEMORY

This test assesses the child's ability to reproduce from memory sequences of digits increasing in length from 2 to 8 digits. The digits are presented at a rate of 2 per second.

VISUAL ASSOCIATION

This test assesses the child's ability to relate concepts presented visually. The child is presented with a single stimulus picture surrounded by four optional pictures, one of which is associated with the stimulus picture.

VISUAL CLOSURE

This test assesses the child's ability to identify a common object from an incomplete visual presentation. There are 4 scenes, presented separately, each containing 14-15 examples of a specified object. The objects are seen in varying degrees of concealment. The child is asked to see how quickly he can point to all examples of a particular object within the time limit of 30 seconds.

VERBAL EXPRESSION

The purpose of this test is to assess the ability of the child to express his own concepts vocally. The child is shown four familiar objects one at a time (a ball, a block, an envelope, and a button) and is asked to tell all he knows about that object.

GRAMMATIC CLOSURE

This test assesses the child's ability to make use of the redundancies of oral language. The task elicits the child's ability to respond automatically to often repeated verbal expressions of standard English. The child comes to expect or predict the grammatic form so that when part of an expression is presented he closes the gap by supplying the missing part. (e.g. Here is a dog; here are two _____., This dog likes to bark; here he is ____).

MANUAL EXPRESSION

This test taps the child's ability to express ideas manually. In this test 15 pictures of common objects are shown to the child one at a time and he is asked to show (using his hands and other body parts) what is done with each. The objects include a telephone, a guitar, a camera, a knife and fork, a suitcase, a comb and mirror, a cigarette and matches, and a stethoscope. The child is required to pantomime the appropriate action.

AUDITORY CLOSURE

This test assesses the child's ability to fill in missing parts which were deleted in auditory presentation and to produce a complete word. The child is asked, "What am I talking about?" bo/le, tele/one. There are 30 items ranging in difficulty from easy words to more difficult ones.

SOUND BLENDING

The sounds of a word are spoken in isolation at 1/2 second intervals and the child is asked to tell what the word is.

CHILDREN'S EMBEDDED FIGURES TEST

The CEFT is a perceptual test which assesses the child's ability to locate a simple form within a complex figure. The score reflects the extent of competence at perceptual disembedding. In other words the child has to recognize and isolate the critical element of the problem. This ability is generalizable beyond the present test to situations in which recognizing the critical element is necessary for successful problem solving.

CONCEPT ASSESSMENT KIT - CONSERVATION

This test measures the child'a ability to conserve, i.e., to recognize that certain properties such as substance weight, volume or number remain unchanged in the face of certain transformations of an objects form, shape, color or position.

According to Piaget's theory the concept of conservation is an important intellectual attribute which signals the transition from a prelogical to a logical mode of thought.

ANALYSIS

The analysis conducted was a multivariate analysis of varriance

(MANOVA) following a technique developed by David S. Poor. This program indicates whether the main effects and interactions are significant. To further analyze the data a series of Tukey B tests were conducted using the information from the MANOVA output. The Tukey B test is a test of multiple comparisons which indicates significant differences between groups on the various subtests.

RESULTS AND DISCUSSION

Grade One

Table 1 presents the means of the raw scores on the WISC-R for the samples and also indicates whether the means differ significantly. As indicated on all of the subtests, the Botwood group scored significantly higher. Since the WISC-R measures abilities that are closely related to school success especially on the verbal subtests, it would be predicted that the Peterview sample would meet with little success in the present school system. What is particularly surprising is that the Peterview sample does so poorly on the non-verbal items. Typically low SES children score better on non-verbal items. However, this is not the case for the present sample as indicated by the mean scaled scores for the WISC-R presented in Table 2. After examining the home environment data, to be discussed later, it is hypothesized that the early environment for the Peterview sample is so impoverished that the level of development of non-verbal and verbal intelligence is severely retarded.

The results relating to the ITPA are presented in Table 3. As with the WISC-R, on all but one subtest, the Peterview group scores significantly lower than the Botwood group. It is perhaps worthwhile to note that the Botwood group is by no means functioning at a superior level. Rather they

function at roughly an average level over most of the tests. Thus in comparison the Peterview sample functions at a below average level. Since success in present school programs tends to be largely determined by intellectual and linguistic abilities there should be little surprise expressed if the Peterview children have great difficulty functioning in the present school system. They simply do not possess the abilities to make them successful. A suggested solution to this very major problem will be discussed in the conclusion and recommendations section.

Conservation and CEFT results presented in Table 4 follow a similar pattern. In all but 1 subtest the Peterview sample can be classified as non-conservers. This has important implications for a Grade one math program as many programs or aspects of a particular program are based on the assumption that children are functioning at an operational level of thought. If an examination of the math program being used indicates that the ability to conserve is important, then it would be expected that the Grade one Peterview sample would experience a great deal of difficulty with it.

Grade Three

For the WISC-R and the ITPA the results are essentially the same as the Grade one results. As shown in Tables 1 and 3 the Botwood sample scores significantly higher on all but two subtests. What is particularly interesting is that an examination of scaled scores, which take age into account, shows that over most of the subtests there is little gain in either the Peterview or Botwood sample. As the Botwood sample is functioning at an average level this presents little problem. However, one would expect the Peterview sample which in Grade one is functioning well below the average level, to benefit from school and increase their level of intellectual and

linguistic functioning as a result of their school experience. On most subtests of the WISC-R and ITPA this is clearly not the case. The Peterview Grade three's are still functioning at much the same level as the Grade one's. In other words the school has done little to increase their level of intellectual or linguistic functioning. In the opinion of the author this is largely due to the fact that the curriculum during Kindergarten, Grades one and three is totally inappropriate to bring about any meaningful change in the abilities of the children. If this situation is to be improved radical changes need to be made in the curriculum during the early years of school.

In regard to the measures of conservation and embedded figures there are no significant differences between the groups. The Peterview group is conserving equally as well as the Botwood group. Both groups are conserving well by grade three in that in most instances they conserve on over 75% of the test items. Hence, there has been a substantial gain especially in the Peterview group on conservation abilities. However, these gains may have little to do with the effects of schooling as it has been argued that the development of operational thought is largely due to maturational factors.

Grade Five

The results for the WISC-R indicates that the Peterview children have made gains on three subtests when compared to the Botwood group. However, overall they are still functioning at a below average level. Overall the Peterview Grade five's have made no substantial gains as compared to the Peterview Grade one's as is shown by the scaled scores. This is in spite of fact that they are functioning below average and should gain in intellectual skills as a result of school experience.

The results for the ITPA indicate that they have largely caught up to the Botwood Grade five's. However, the Botwood Grade five's are not functioning at a comparable level to the Grade one's and three's as shown by the scaled scores presented in Table 5. However, the scaled scores must be interpreted with some caution as a number of the sample were too old to scale with a resulting decrease in sample size. Overall then it is fair to say that by Grade five the Peterview sample functions at a level similar to the Botwood sample in some areas of linguistic functioning. However, it must be remembered that the Grade five Botwood sample is somewhat atypical when compared to the Grades one and three samples. This will be brought out more clearly by the background data.

FAMILY VARIABLES

A major part of the research was to examine family variables. It is these variables that provide an explanation for the low level of functioning found in the Peterview children. First an examination of background variables will be presented followed by an examination of the family press variables. The background variables examined in the present research were: father's and mother's occupation, father's and mother's education, whether or not both parents were living in the home, the number of other adults living in the home, the number of children in the family and the number of children living at home.

For Grades one and three the following results were found. The Botwood fathers had a significantly higher education and occupation than the Peterview fathers. Although the Botwood mothers had a significantly higher education than the Peterview mothers, the mothers of the Grade one children did not differ significantly in occupation. This was due to the fact that the majority of mothers in both samples were housewives. For the Grade three sample the Botwood mothers had a significantly higher occupation rating than Peterview mothers. There were no significant differences in whether both the

parents were living in the home or the total number of adults in the home. The Peterview group did have significantly larger families and significantly more children living in the home.

The Grade five Botwood sample was somewhat atypical when compared to the Grades one and three samples. Although Botwood fathers and mothers had significantly more education than the Peterview sample neither the father's not mother's occupation was rated as higher. This can be understood in the mothers case as they were housewives. However, in the case of the Botwood fathers they had occupations that rated lower on the Blishen Scale and were similar to the Peterview sample. There were no significant differences in whether the parents were living in the home or the number of adults in the home. There was also no significant difference in the number of children or in the number of children living in the home. Overall, the Grade five Botwood sample is more similar, at least in background variables, to the Peterview Grade five sample than it is to either the Grade one or Grade three Botwood sample.

FAMILY ENVIRONMENT VARIABLES

As part of the research, parent interviews were conducted in order to provide an understanding of the home environment as it relates to school success. Six environmental variables, that have been identified in the research as relating to intellectual competency and school success were examined. They were: achievement press, language models of the home, academic guidance provided by the home, activeness of the family, intellectuality of the home and work habits of the family. A brief description of these variables follows.

ACHIEVEMENT PRESS

a. Parental Aspirations for the Education of the Child.

- nature of the educational and vocational goals
- level of expectation of the educational accomplishments

b. Parents' Own Aspirations

- present accomplishments
- means of the accomplishments
- future aspirations

c. Parents' Interest in Academic Achievement

- extent of participation in the educational activities
- keenness for the educational progress of the child

d. Social Press for Academic Achievement

- education of the close relatives, parents, friends and neighbours
- education of their children

e. Standards of Reward for Educational Attainment

- valuing academic accomplishments
- selection of gifts having educational value

f. Knowledge of the Educational Progress of the Child

- extent of knowledge of the child's educational progress
- extent of knowledge of the textbooks used by the child and his courses of study

g. Preparation and Planning for the Attainment of Educational Goals

- financial preparation
- academic and mental preparation

The Botwood group at all three grade levels scored significantly higher than the Peterview sample on this variable. Thus as a group the Botwood parents place more stress on academic achievement than the Peterview parents. This might best be illustrated by a comment made by one mother when asked how far she expected her child to go in school. The mother replied, "If he has to go to school until his hair is grey he is at least going to finish high school". Thus, in the Botwood sample there is a much greater emphasis on being successful in school and achieving a good education than in the Peterview group. These values, of course, are passed on to the children who probably accept the value parents place on education.

LANGUAGE MODELS

a. Quality of the Language Usage of the Parents

- fluency of expression
- pronounciation
- vocabulary
- organization of thoughts

(This was noted from the conversation with the mother during the interview.)

b. Opportunities for the Enlargement and Use of Vocabulary and Sentence Patterns

- variety of opportunities
- frequency of opportunities

c. Keenness of the Parents for Correct and Effective Language Usage

- regularity in reading to the child during preschool period
- variety of efforts for increasing vocabulary and correcting language usage, if needed.

At all three grade levels the Botwood sample scored significantly higher than the Peterview sample. As a result, there is more press in the Botwood families for the development of appropriate forms of speech than in the Peterview families. Thus it would be expected that the Botwood sample would develop language skills which allow them to be more successful in school as the school situation is so linguistically orientated. The importance of language models is evident when one examines the verbal scores of the WISC-R and the ITPA. One the whole the Peterview sample can probably be characterized as language retarded, at least in the style of language that relates to school success. It is evident that the family background contributes to this fact. Considerable research has been done with the language retarded child and there are effective methods of dealing with this problem. These will be discussed under the recommendations section.

ACADEMIC GUIDANCE

a. Availability of Guidance on Matters Relating to School Work

- extent of general supervision regarding school work
- readiness in guidance when asked for
- suggestions regarding school work

b. Quality of Guidance on Matters Relating to School Work

- relevance to the specific educational needs of the child
- consistency
- competence (education of parents, etc.)

c. Availability and Use of Materials and Facilities Related to School Learning

- selection of the material
- guidance for the use of the material and educational facilities

At all three grade levels the Botwood sample scored significantly higher than the Peterview sample. The Botwood parents are more interested and aware of the importance of providing guidance to their children on school-related matters than the Peterview parents. This may be due to the fact that the Peterview parents simply do not have the education and knowledge to provide this guidance to their children. This problem can be remedied by involving parents in various ways with a very specialized kindergarten program which encourages parents to become involved in the education of their children.

ACTIVENESS OF FAMILY

a. The Extent and Content of Indoor Activities of the Family

- variety
- frequency
- educational value

b. The Extent and Content of Outdoor Activities dueing Weekends and Vocations

- variety
- frequency
- educational value

c. Use of T.V. and Such Other Media

- purpose of the use
- extent of the use

d. Use of Books, Periodical Literature, Library and Such Other Facilities

- variety of material used by the family members
- encouragement to the child for the use of such material

Essentially this variable deals with the type of activity that a family undertakes together and the materials utilized during this activity. In thepresent case the Botwood sample makes use of activities and materials that are more educationally orientated than the Peterview group. In light of the findings relating to other family variables this result was expected.

INTELLECTUALITY OF THE HOME

a. Nature and Quality of Toys, Games, and Hobbies Made Available to the Child
   - thought-provoking element in the toys
   - variety

b. Opportunities for Thinking and Imagination in Daily Activities
   - variety
   - level of complexity
   - extent of encouragement for independent thinking

Once again at all three grade levels the Botwood sample scored significantly higher than the Peterview group. The Botwood parents encourage and provide opportunities for their children to undertake intellectual activities in the home which in turn will further encourage the children to undertake the intellectual activities of the school. From the family variables examined so far a clear picture emerges of the Botwood parents stressing educationally orientated values and activities where as the Peterview parents do not.

WORK HABITS OF THE FAMILY

a. Degree of Structure and Routine in the Home Management
   - planning and distribution of work
   - punctuality in following it

b. Preference for the Educational Activities Over Other Pleasurable Things
   - priority to educational activities
   - continuity of academic activities

In the terms of this aspect of family environment only the Grade one Botwood sample differs significantly from the Peterview sample. This finding for the Grades three and five is inconsistent with the previous findings. The reasons for this can only be suggested. The finding may be due to chance or perhaps the environmental scale was not sensitive enough to discover any differences that might exist. However, these are only suggested reasons and no definite conclusion can be drawn on the basis of the present research.

CONCLUSIONS AND RECOMMENDATIONS

It is evident that the sample of Peterview children represented in the present study manifest the symptoms of environmental impoverishment. Their low scores on the tests given are indicative of this. Further, when the home environments are examined it is clear that environmental impoverishment exists. The effects of the home are manifested in the low level functioning of the children. Research indicates that these are the type of children that meet with little success in the standard school system. What is needed is a specialized program which begins at the kindergarten level. This program must involve the home as well, if any real changes are to occur. The following discussion places the present research in the larger context and provides a brief introduction to the type of program that has been successful with low socio-economic children.

RETARDATION IN DISADVANTAGED CHILDREN

With no known exceptions studies of low socio-economic children between the ages of 3-6 have shown them to be retarded in intellectual abilities. This retardation is not always large but it exists when these children are compared to average children. The differences are largest in those abilities most relevant to school success, especially language abilities. These differences are evident in the present data as well and extend well beyond 6 years of age. The disadvantaged child is typically a year behind the average child in terms of language development; vocabulary size, sentence length and use of grammatical structure. As well they are behind in the development of reasoning ability or logical development (Taylor et al., 1974; Jones, 1971). Overall the research shows a clear picture of retardation in terms of language and intellectual abilities in low socio-economic children (Bereter and Engelmann, 1971). Thus the present findings are not unique to the Peterview-Botwood area but are generalizable to low SES groups provincially, nationally and internationally.

RETARDATION RELATES TO SCHOOL SUCCESS

It might be expected that disadvantaged children would quickly make up their lack of abilities once they enter school. However, this is not so as pointed out in a comparison of the scaled scores. Other research as well clearly indicates that the disadvantaged child does not make significant gains in abilities once he is in school. That is, compared to the middle class child the low socio-economic child falls further and further behind. This phenomena has come to be called cumulative defficiency, in which small deficiencies at an early age lead to inferior learning which in turn increase

the magnitude of the deficiency (Taylor and Skanes, 1976 in press). This is evident in the Peterview-Botwood schools when one examines the children who are failing or who drop out of school. School failure is still largely a low socio-economic problem.

If the point is accepted that Peterview children and disadvantaged children generally are behind other children in a number of developmental aspects, then it follows that they must learn at a faster than normal rate if they are to catch up. This may not be a popular conclusion but there is no way to contradict it unless it is denied that the disadvantaged child is behind or unless it is denied that it is important for them to catch up. To deny the first point is to contradict the total body of evidence available. While to deny the second point dooms the disadvantaged child (the Peterview child) to perpetual school failure. Even more basic the child is doomed to failure in a society that places great emphasis on educational qualifications. Thus, the only real issue open to question is what the nature of this faster than normal progress should be. In other words, how can learning be accelerated to a greater than normal rate?

THE INADEQUACY OF STANDARD ENRICHMENT PROGRAMS

The most widely endorsed strategy for helping the low socio-economic child overcome learning deficiencies is enrichment. In broad terms the strategy of enrichment is to compress into remedial programs the maximum quantity of experiences believed to contribute to the advantaged childs' superiority of learning. In other words an attempt is made to enrich the low socio-economic childs' experiences by offering him experiences similar to those received by middle class children. The author is unaware of present or past curricula that has been attempted but suspects that various forms of

enrichment have been attempted and met with failure. If the role of enrichment is seen as catching the disadvantaged child up it has and will continue to fail. This is very clearly shown in Arthur Jensen's Harvard Educational Review article (1969). The reason is simple; while the disadvantaged child is going through these experiences which the privileged child has already gone through, the privileged child is also going through new experiences and is learning new things. In other words, the privileged child is not standing still but is experiencing new situations and learning new skills. Over a long period of time (perhaps 10 or 12 years) enrichment might work but that length of time is not available. If a disadvantaged child has not caught up by the end of Grade two or three he is almost certainly doomed to perpeptual failure. Children leave school and "turn off" education because they fail. It is important that the school break this cycle of failure. In fact, if the school does not break the cycle of failure the school is not adequately doing its job. Thus, it is vital that teachers select experiences that produce maximal learning in the short time available either in a standard kindergarten program or in a headstart program.

SELECTION AND EXCLUSION OF PROGRAMS

If a child is retarded one year, as most disadvantaged children are, and there is only one year of kindergarten experience to make up the deficit the child must learn at twice the normal rate to catch up. To be able to do this one must limit the objectives of the program to learning experiences that will promote school success. In other words there must be an academic emphasis to the exclusion of the so-called whole child approach characteristic of many kindergarten programs. Although concern with the child's overall development is commendable there are several flaws in this approach for the disadvantaged child.

1. It fails to consider the child's future. A program that is so concerned about the whole child that it destroys his future is not meeting the needs of the child. The threat of school failure is so great that unless it is wiped out it will cancel any gains in emotional health or social adjustment.

2. The idea that to produce a well rounded child it is necessary to have a well rounded program reveals ignorance of the fact that a world exists outside the school door. Children need social interaction but they can experience it outside the school. School should teach the disadvantaged child specific skills which allow him to be successful in school.

3. The teacher who tries to extend herself to meet all the needs of her children extends herself beyond her competency to areas of social work, counselling and even midicine. There are professionals who deal with these areas and the teacher should be primarily concerned with her task of promoting learning.

PROGRAM GOALS FOR THE DISADVANTAGED CHILD

Any program must have goals and the goals should depend largely on the present state of knowledge of the children. The following goals have been used in a program with severe linguistically retarded children. These are minimal goals and are presented here not to say that they will be acceptable for every group of children but to provide examples of goals that have been found to be useful.

MINIMUM GOALS

1. Ability to use both affirmative and NOT statements in reply to the question "What is this?" "This is a ball. This is not a book."

2. Ability to use both affirmative and NOT statements in response to the command "Tell me about this _____ (ball, pencil, etc.)." "This pencil is red. This pencil is not blue."

3. Ability to handle polar opposites ("If it is not _____, it must be _____") for a number of concept pairs, e.g., big-little up-down, long-short, fat-skinny.

4. Ability to use the following prepositions correctly in statements describing arrangements of objects: on, in, under, over, between. "Where is the pencil?" "The pencil is under the book."

5. Ability to name positive and negative instances for at least four classes, such as tools, weapons, pieces of furniture, wild animals, farm animals, and vehicles. "Tell me something that is not a weapon". "A cow is not a weapon." The child should also be able to apply these class concepts correctly to nouns with which he is familiar e.g., "Is a crayon a piece of furniture?" "No, a crayon is not a piece of furniture. A crayon is something to write with."

6. Ability to perform simple if-then deductions. The child is presented a diagram containing big squares and little squares. All the big squares are red, but the little squares are of various other colors. "If the square is big, what do you know about it?" "It is red."

7. Ability to use NOT in deductions. "If the square is little, what else do you know about it?" "It is not red".

8. Ability to use OR in simple deductions. "If the square is little, then it is not red. What else do you know about it?" It's blue OR yellow".

9. Ability to name the basic colors, plus white, black and brown.

10. Ability to count aloud to 20 without help and to 100 with help at decade points (30,40, etc.).

11. Ability to count objects correctly up to 20.

12. Ability to recognize and name the vowels and at least 15 consonants.

13. Ability to distinguish printed words from pictures.

14. Ability to rhyme in some fashion to produce a word that rhymes with a given word, to tell whether two words do or do not rhyme, or to complete unfamiliar rhyming jingles like "I had a dog, and his name was Abel; I found him hiding under the _____."

15. A sight-reading vocabulary of at least 10 words in addition to proper names, with evidence that the printed word has the same meaning for them as the corresponding spoken word. "What word is this?" "Cat". "Is this a thing that goes 'Woof-Woof'?" "No, it goes 'Meow'."

ACHIEVING GOALS

Rather than trying to achieve these goals in an indirect fashion, the way many standard programs do, the most effective way is to plan activities which focus directly on the goals. Activities which disrupt this learning process must be curtailed. The following is an example provided by Bereiter and Engelmann (1971) to illustrate the teaching methods.

Presentation	Reasons
Teacher: (Presents picture of rifle) This is a _____.	She begins with no verbal explanation. Lengthly verbal preambles do not make learning easier or the material more meaningful to naive children. They simply bore the child or entertain him in a passive non-productive manner.
Child B: Gun. Teacher: Good. It is a gun. Let'a all say it: This is a gun. Again. This is a gun.	She would have favoured the word RIFLE instead of GUN, but since GUN is correct and since the response was apparently the product of thinking, she uses GUN, and she praises the child.

A number of various teaching techniques have been shown to be effective with this type of structured program.

1. Work at different levels of difficulty at different times. The teacher should present tasks on four levels of difficulty.

   a) Require the child to point or locate the instance of the concept non-verbally, e.g., "show me which truck is bigger".

   b) Require the child to answer (1 word) yes/no questions about the presentation "Is this truck bigger?"

   c) Require the child to repeat the basic statements - "Tell me is this truck bigger than this truck?" "Give me the whole answer. "Yes, this truck is bigger than this truck."

   d) Require the child to identify the relationship by producing the appropriate statement without the support of a directed question. "Tell me about this truck." The teacher should attempt to work at this level as much as possible.

2. Adhere to a rigid repetitive presentation pattern. This is especially important in the initial stages of the program. Use the same method of presentation consistently. For the highly

verbal teacher it is sometimes a difficult job to adhere to memorize statements. However, the language deprived child is not familiar with the basic structure of language and the simplest pattern is a challenge to him. If the pattern of presentation is varied too often it will only serve to confuse the child.

3. Use unison responses. Don't work with individual children. Teachers can make use of the following rule of thumb, - when working with children individually the others in the class are learning very little. No individual aid should last longer than 30 seconds. If a child's turn at individual work takes longer than 30 seconds the task should be restructured.

4. Require the children to speak in loud clear voices. The no noise axiom of many classrooms has no place in this program. Mumbling only serves to mask the deprived child's inability to talk properly. In requiring loud responses the teacher will meet with some resistance. However, she should be persistent and should not allow "small-voiced" responses, perhaps, by playing deaf. "John, you will have to speak up. I'm getting old and can't hear you."

5. Do not hurry the children. Often the language disadvantaged child amalgamates parts of the sentence, runs his words together so that he is virtually unintelligible. The teacher should moderate the tempo of the child's speech and emphasize correct pronunciation.

6. Use questions liberally. Questions are valuable because they call the child's attention to specific parts of a sentence. For the first several months the teacher should follow every statement with a string of questions. "The book is on the table. Where is the book?" "What is on the table? Is the book on the floor?" In answering questions like this the child learns both about the use of prepositions as well as the structure of sentences.

7. Use repetition. The disadvantaged child may take days to learn what a more fortunate child can learn in several sessions. The teacher should be aware of this and plan on going over basic statements sometimes hundreds of times. Further, the child will tend to forget those concepts he has great trouble learning. As a result skills should be reviewed daily. There is no substitute for repetition of basic teaching patterns.

8. Use short explanations. Since the deprived child does not possess a great deal of language knowledge, explanations should be short, one sentence explanations. Further, these explanations should take account of the child's present level of knowledge.

9. Use examples. When presenting a new concept don't make the mistake of presenting a limited number of objects and talking about these. If you are teaching the concept of 'long' and

only present one object the child has no way of knowing whether 'long' refers to relative length or to some irrelevant detail such as the shape of the object. As a result it is necessary to present many examples of the concept "long".

10. Prevent incorrect responses. The teacher who anticipates an incorrect response before it occurs and short circuits it helps the child overcome chronic mistake patterns more quickly. The teacher can prevent guessing with statements such as, "Now, think", "Take it a step at a time." "What do you ask yourself first?"

11. Be completely unambiguous in correcting the children. If a child is asked to put a yellow pencil on the table and he puts a green one instead the teacher should make it perfectly clear that the child made an incorrect response. "No, that is not right. That is a green pencil not a yellow pencil." By responding in this fashion the teacher constantly directs the child's output and achieves relatively fast smooth learning. However, it should be noted that tasks should be structured so that children experience success much of the time.

12. Encourage thinking behavior. After correcting, the teacher should acknowledge that the child is operating in a way that will ultimately lead to success. "John is trying. He'll get it, you'll see. That is because he thinks so hard." Thus, the teacher is letting the child know that she approves of his behavior even if it sometimes leads to an incorrect response. Non-thinking behavior should also be discouraged in a positive way. "Did you try hard today"? "I don't think so. You fooled around a lot and didn't pay attention. But you are a smart boy and you can get it if you try. You come in tomorrow and really work, Okay".

13. Use concrete rewards. In many instances young children, both advantaged and disadvantaged, require concrete rewards, for example, smarties, when they achieve a correct response. Simple verbal reinforcement, such as "good boy", is not enough to keep children functioning at maximum levels. This is especially true of the disadvantaged child who has had no experience with formal education and does not appreciate a simple verbal reinforcement. By combining concrete rewards with verbal rewards disadvantaged children learn that verbal rewards are meaningful. However, verbal reinforcement should never totally replace concrete rewards.

Each of these relatively simple rules requires a great deal of skill to be handled appropriately by the teacher. No teacher possesses these skills as a natural gift but almost any teacher can acquire the necessary skills if given the appropriate training.

The foregoing discussion presents a type of program necessary for the school situation. However, if significant change is to occur there must be some home involvement as well. By getting the home involved in the educational process it is possible over a period of time to change the attitudes of the parents towards the school. It is possible to get the home involved through the cooperation of other persons associated with agencies such as the Department of Social Services (social workers) or the Department of Health (public health nurses). The following procedure can be utilized in home involvement. A program providing daily activities for parents or an older sibling to undertake with the child is drafted. This program consists of simple activities that parents undertake to stimulate intellecutal growth in their children. As they accomplish a certain activity they check it off on a check list. Weekly or bi-weekly when the social worker or public health nurse visits, the checklist is returned and the worker goes over the list with the parents to ensure that the tasks were covered and the goals achieved. A new list of daily activities is then given to the parents to cover the next two week period until the social worker or nurse makes a return visit. It must be stressed that these are simple activities that the worker can explain and demonstrate clearly to the parent. Research with home learning programs indicates that initially there is some hesitation on the part of parents and considerable encouragement and presuasion are necessary. However, once parents begin to see changes occuring in their children they become supporters of the program. As well, public meetings with the parents held in the school on a regular basis, at least once a month, to explain the program and the progress of the children in the program greatly facilitate; the home learning program. Low SES parents have generally felt isolated, frightened and ignorant of school programs. These parents, as the present

research indicates, have had little success in the school system themselves. Although they are interested and concerned about their children they are not aware of the activities they can do with their children to promote intellectual and linguistic development. Once they are made aware of these activities and put them into practice in conjunction with a specialized kindergarten program remarkable changes are likely to occur in the children. If educators wish to make any difference in the abilities of the deprived child then programs based on these rules must be utilized. Research clearly indicates that it is only through direct teaching programs, and involvement with the home that the low SES child makes significant gains in school success. If principals, supervisors and teachers really want to make a difference to the disadvantaged child, to offer him not only a linguistic but also an educational and vocational choice, then they must encourage a new direction in kindergarten programs. If not, they will continue to see the same problems of school failure and drop out in the disadvantaged child that they have seen in past years. This then is their responsibility, to act, as they have been made aware of, at least in general terms, of a new direction for education for the low SES language deprived child.

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TABLE 1

Mean Raw Scores On WISC-R

VARIABLE	GRADE ONE BOTWOOD $\bar{X}$	GRADE ONE PETERVIEW $\bar{X}$	GRADE ONE TUKEY b	GRADE THREE BOTWOOD $\bar{X}$	GRADE THREE PETERVIEW $\bar{X}$	GRADE THREE TUKEY b	GRADE FIVE BOTWOOD $\bar{X}$	GRADE FIVE PETERVIEW $\bar{X}$	GRADE FIVE TUKEY b
Information	5.200	3.300	*	9.750	5.950	*	12.550	10.250	*
Similarities	6.650	3.100	*	10.150	6.850	*	13.400	9.500	*
Arithmetic	6.450	3.200	*	9.850	8.000	*	12.650	11.100	*
Vocabulary	12.947	8.900	*	21.900	12.950	*	27.100	19.600	*
Comprehension	9.474	6.000	*	12.950	9.000	*	15.700	13.750	
Picture Completion	10.600	6.000	*	15.550	10.600	*	19.350	16.700	*
Picture Arrangement	9.000	1.300	*	21.800	8.950	*	27.700	18.450	*
Block Design	10.900	3.050	*	21.850	11.700	*	31.750	18.700	*
Object Assembly	13.632	7.500	*	20.400	14.150	*	22.350	19.050	
Coding	35.842	18.950	*	33.000	25.550	*	36.100	34.550	
Mazes	12.222	5.000	*	----	----		----	----	

* $P < .05$

TABLE 2

Mean Scaled Scores On The WISC-R

VARIABLE	GRADE ONE		GRADE THREE		GRADE FIVE	
	BOTWOOD $\bar{X}$	PETERVIEW $\bar{X}$	BOTWOOD $\bar{X}$	PETERVIEW $\bar{X}$	BOTWOOD $\bar{X}$	PETERVI $\bar{X}$
Information	9.222	6.600	9.300	5.500	8.900	6.400
Similarities	9.944	7.000	10.500	7.650	10.350	6.900
Arithmetic	11.167	7.067	10.850	8.700	11.450	9.150
Vocabulary	9.056	6.733	9.750	5.100	8.950	5.000
Comperhension	11.389	8.800	10.350	7.450	9.250	7.950
Picture Completion	10.278	6.533	10.650	7.150	11.550	9.200
Picture Arrangement	8.889	4.067	10.900	5.400	11.100	7.600
Block Design	10.722	5.933	11.900	8.850	11.650	7.500
Object Assembly	11.333	7.067	12.050	8.900	11.050	9.150
Coding	12.056	7.267	10.350	6.700	8.500	7.900
Mazes	10.588	5.800	----	----	----	----
Verbal Score-scaled	50.778	36.200	50.250	34.400	48.900	34.900
Verbal Score-IQ	100.444	83.000	100.050	80.600	98.200	81.250
Performance Score-scaled	53.278	30.867	55.350	37.000	53.850	41.350
Performance Score-IQ	104.556	74.200	107.200	82.350	104.900	88.000
Full Scale-scaled	104.056	67.067	105.600	71.400	102.750	76.250
Full Scale-IQ	102.389	77.400	103.450	80.050	101.350	83.250

TABLE 3

Mean Raw Scores on ITPA

VARIABLE	GRADE ONE BOTWOOD $\bar{X}$	GRADE ONE PETERVIEW $\bar{X}$	GRADE ONE TUKEY b	GRADE THREE BOTWOOD $\bar{X}$	GRADE THREE PETERVIEW $\bar{X}$	GRADE THREE TUKEY b	GRADE FIVE BOTWOOD $\bar{X}$	GRADE FIVE PETERVIEW $\bar{X}$	GRADE FIVE TUKEY b
Auditory Reception	25.150	14.900	*	34.263	23.700	*	38.750	30.450	*
Visual Reception	17.300	13.650		26.263	20.650	*	29.650	26.300	
Visual Sequential Memory	18.950	15.250	*	20.579	19.950		23.300	22.100	
Auditory Association	22.150	13.550	*	30.684	20.600	*	32.850	29.400	*
Auditory Sequential Memory	25.950	18.700	*	32.263	25.600		34.950	34.250	
Visual Association	18.850	12.400	*	25.263	19.850	*	28.350	25.250	
Visual Closure	23.750	18.400	*	33.211	23.450	*	32.450	33.200	
Verbal Expression	23.250	15.600	*	28.895	23.750	*	28.250	31.650	
Grammatic Closure	17.750	11.400	*	24.947	16.600	*	28.850	25.050	*
Manual Expression	24.700	19.450	*	31.526	25.750	*	27.200	32.950	*

* $P < .05$

TABLE 4

Mean Scores On Conservation & CEFT Measures

VARIABLE	GRADE ONE			GRADE THREE			GRADE FIVE		
	BOTWOOD $\bar{X}$	PETERVIEW $\bar{X}$	TUKEY b	BOTWOOD $\bar{X}$	PETERVIEW $\bar{X}$	TUKEY b	BOTWOOD $\bar{X}$	PETERVIEW $\bar{X}$	TUKEY b
Two-dimensional space	2.500	0.474	*	4.000	3.050	*			
Number	3.300	1.368	*	3.950	3.600				
Substance	2.150	0.632	*	3.850	2.900				
Continuous Quantity	2.250	1.053	*	3.800	2.800				
Weight	2.350	0.842	*	3.700	3.200				
Discontinuous Quantity	2.250	0.842	*	3.800	2.800				
Area	4.350	3.053		5.800	5.650				
Length	3.550	1.263	*	5.800	4.700				
CEFT	11.632	5.600	*	16.550	14.300		20.500	18.750	

* $P<.05$

TABLE 5

Mean Scaled Scores for the ITPA

VARIABLE	GRADE ONE		GRADE THREE		GRADE FIVE	
	BOTWOOD $\bar{X}$	PETERVIEW $\bar{X}$	BOTWOOD $\bar{X}$	PETERVIEW $\bar{X}$	BOTWOOD $\bar{X}$	PETE
Auditory Reception	35.850	26.700	35.263	27.050	29.727	21.
Visual Reception	34.600	31.100	36.579	29.450	39.000	31.
Visual Sequential Memory	38.400	32.250	35.263	34.950	37.000	35.
Auditory Association	35.450	22.250	38.368	24.250	34.545	26.
Auditory Sequential Memory	39.150	32.350	38.842	34.350	36.727	35.
Visual Association	33.100	23.550	34.684	27.650	33.636	30.
Visual Closure	40.650	34.850	41.789	31.650	34.000	37.
Verbal Expression	36.950	30.750	33.263	30.600	30.455	33.
Grammatic Closure	36.150	26.600	34.421	23.700	34.364	27.
Manual Expression	39.450	34.150	41.158	35.100	31.545	38.
Sum Of Scaled Scores	369.750	295.150	370.158	299.250	341.000	313.